



## **Panel Discussion**

### **Macro and micro interdependences in the evolutionary theory context**

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#### **Issues for the debate**

Research on innovation systems and on innovative behaviour is frequently carried out without explicitly taking into consideration the impact macroeconomic variables exert upon microeconomic behaviour. The analysis is performed 'as if' the so called 'aggregate prices' in the economy – the exchange rate, the interest rate, external tariffs, the wage rate, – only play a secondary role affecting the search for, and the introduction of, new products, new production processes and new forms of production organization. Thus, a major divorce seems to prevail between the study of the global functioning of the economy and the way in which firms manage their R&D activities and conceive their innovation strategies. Moreover, as the above divorce between macro and micro is also carried out to many studies looking at innovation in LDCs, we tend to assume that said interaction between macro and micro forces operates in a somewhat similar fashion in LDCs as it does in developed nations. This is clearly wrong and demands further thorough examination. We hope the present session to illuminate some of these issues.

To start with, developing countries exhibit a much more volatile macroeconomic behaviour than the one we find in more mature industrial societies. (Stiglitz, Ocampo). The fact that the degree of macroeconomic uncertainty is much larger in LDCs than in DCs probably explains why domestic firms take a more 'defensive' stance and do not commit themselves to long term economic decisions, involving the exploration of the international technological frontier and undertake 'state of the art' innovation efforts. (Katz; Kosacoff). On the other hand, DCs exhibit a more mature institutional environment, stronger coordination capabilities from the part of the public sector and a much wider distribution of public goods related to high quality education and health services, both important components of a more efficient labour force. Furthermore, DCs operate closer to the international technological frontier and spend in R&D activities between two and five times as much – in % of GDP – than LDCs. Bringing the above elements together we begin to understand that we are indeed dealing with very different scenarios of social and economic organization, and that such differences can not be neutral for the way in which we try to account for innovative behaviour and productivity growth.

But this is by no mean the complete story. Following Washington Consensus advice numerous LDCs have over the past two decades open up their economies to foreign

competition, de-regulated markets and privatized economic activities. This has triggered off a major process of 'destruction' and 'creation' of production and technological capabilities in the economy, with thousands of firms being forced out of the market and structural unemployment reaching historically high levels. The re-structuring process has been in the direction of static comparative advantages, with most LDCs now specializing in natural resource processing activities and in 'maquila-type' assembly industries intensively using unskilled labour. Very little has occurred in terms of 'technological deepening' in the economy, with local firms being now involved in low domestic value added activities. Of course there notable exceptions can be found, but on the whole this seems to be the prevailing global scenario.

Globelics meetings have not does far given much attention to the above mentioned differences in macro-to-micro interactions and their incidence upon innovative behaviour. The forthcoming sessions at Mexico City open up a very good opportunity to begin exploring the above issues. Much of the current thinking on the functioning of national innovation systems and, indeed on innovative behaviour in general, seems to reflect sector or industry-specific circumstances taking the macro for granted and assuming that we can leave on the side the impact of a much more volatile macroeconomic setting, a much more immature institutional environment, and much less coordination capabilities from the part of the public sector when carrying out technological and innovation policies.